

NEW ORTHOPTERA FROM NEVADA.

BY ALBERT P. MORSE, WELLESLEY, MASS.

Among a small lot of Orthoptera collected in Nevada by Mr. C. F. Baker I find four new species, as follows:—

CORDILLACRIS AFFINIS, sp. nov.

One male, five females, Ormsby Co., Nev., July 6. These specimens agree in size, general form, proportions, and markings with *C. occipitalis*, but differ as follows: the front margin of the scutellum of the vertex is farther removed from the apex and external margin of the vertex, being nearer a line drawn at the level of the front margin of the eyes than to the apex of the vertex—in *occipitalis* the reverse is true,—and the fuscous stripe on the dorsal part of the outer face of the hind femora is broken up into narrow transverse fasciae. The name *CORDILLACRIS* has been proposed by Rehn (Can. ent., vol. 33, p. 271) to replace *ALPHA* (Brunner Rev. syst. orth., p. 121, 1893) which is preoccupied in Hymenoptera.

STENOBOTHRUS ACUTUS, sp. nov.

Five males, Ormsby Co., Nev., July 6. Closely allied to *St. curtipennis* but differing in having the vertex more produced and the angle of its sides more acute; the facial costa is also wider and scarcely or not at all narrowed opposite the median ocellus. The lateral foveolae are deep and very distinct, and the antennae average shorter (in the specimens seen). Possibly it is but a geographical race but in either case it seems worthy of a name.

Antenna: 8.5–9.5; hind fem.: 11–12; tegmina: 10–12; total length: 16–17.5 mm. The tegmina equal the abdomen.

HESPEROTETTIX NEVADENSIS, sp. nov.

Three males, three females, Ormsby Co., Nev., July 6. Very similar to *H. brevipennis*, the female somewhat smaller, differing in ornamentation and slightly in structure, the vertex being a very little narrower between the eyes, and the tegmina relatively shorter, especially in the male. The tegmina in both sexes are about one and one third times as long as the exposed portion of the abdomen (in *brevipennis* nearly or quite covering abdomen, particularly in male). General color pea-green, ranging (in male at least) to rusty brown, and varied with pale yellow stripes on mid-carina and on anterior portion of lateral carinae of pronotum, on meso- and metapleura, lower margin of genae, lower margin of outer face of hind femora, and on the veins of the tegmina especially the posterior ulnar. Hind femora with ferruginous annulus above knee, in brown male showing indications of two obliquely transverse fuscous fasciae. Hind tibiae bluish green, paler

at tip. Fuscous markings and cloudings are also present in varying degree on the lateral lobes of the pronotum and along the margins of the median dorsal pale stripe, on the vertex and occiput, the meso- and metapleura, and the geniculations of the hind femora. The anterior and middle femora are ferruginous.

Antenna: ♂, 7; ♀, 7; hind fem.: ♂, 9; ♀, 11.5-12.5; tegmina: ♀, 6.3-6.7; ♂, 8.5-9; total length: ♂, 16; ♀, 21 mm.

BRADYNOTES COMPACTA, sp. nov.

Four males, four females, Ormsby Co., Nev., July 6.

Nearly allied to *B. obesa*, differing from that species in its smaller size, the structure of the pronotum, the less upturned end of the abdomen, and in the form of the supra-anal plate of the male. In *obesa* this plate is as wide as long, in *compacta* it is distinctly longer than wide. The lateral carinae of the pronotum are equally as distinct or even better developed than in *obesa* and less irregular in course, in *obesa* being broken or angulate at the anterior and middle sulci, forming two pairs of lines diverging posteriorly while in *compacta* they form essentially but one pair of divergent lines though somewhat sinuous (♀) or subangulate (♂) at the crossing of the sulci.

Antenna: ♂, 7; ♀, 7; hind fem.: ♂, 10-10.6; ♀, 10.5-11.5; pronotum: ♂, 3.7-4.2; ♀, 4.2-4.5; total length: ♂, 18-19.5; ♀, 20-25 mm.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—XII.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Erannis tiliaria Harris. This well-known larva has been frequently referred to in economic entomological literature, but I find no description of all the stages. Harris gives a good general account of the habits; Jaeger, Coquillett, Saunders, Fernald and Lugger have also written on it. The species has been bred at the Department of Agriculture and all the larval stages preserved and Mr. H. D. Merrick has sent me eggs from New Brighton, Penn., laid Oct. 31, which hatched April 6, the following year.

EGG. Elliptical, flattened on two sides, soft-shelled, concave; no flattening on micropylar end but the other end smaller and depressed; outline nearly regularly elliptical. Reticulations large and coarse, a little transversely elongate, the areas concave. Size $.6 \times .5 \times .3$ mm. Color ochereous yellow, dark gray just before hatching.

STAGE I. Head rounded, scarcely bilobed, dull, sordid, reddish luteous, held obliquely erect, vertex dark, eye dull black; width .3 mm. Body rather robust, uniform, ends rounded.